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ABSTRACT

The Northeast Academic Science Information Center (NASIC), a program of the New England Board of Higher Education which was initially funded by the National Science Foundation, represents an attempt to apply on a regional basis the concept of brokerage or wholesaling to the provision of computer-based information services. The center expects to be run in a business-like fashion and to be self-supporting. Some of the functions envisioned are market studies, promotion, personnel training, aggregation of demand, and document delivery. Of great importance is the establishment at each university of an information services librarian, who would be the interface between the suppliers and users of information services. The development of demand and the subsequent economies of scale should permit NASIC to be self-sustaining. After bibliographic and abstract services are achieved, the actual delivery of documents is the next goal. (WH)

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NASIC -- A REGIONAL EXPERIMENT IN THE BROKERAGE OF INFORMATION SERVICES

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NASIC -- A REGIONAL EXPERIMENT IN THE BROKERAGE OF INFORMATION SERVICES *

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The Northeast Academic Science Information Center (NASIC), a program of the New England Board of Higher Education, represents an attempt to apply on a regional basis the concept of brokerage or wholesaling to the provision of computer-based information services. Through intense promotion and active marketing of services and through training of Information Service Librarians on the campuses of the major academic institutions, NASIC aims to create, tap and serve the substantial market of researchers in the Northeast who are in need of continuous and comprehensive information. Through aggregation of user demand and negotiation of bulk purchase contracts with multiple suppliers, NASIC intends to serve the research community of the Northeast at a reasonable cost while assuring its own continued viability as a self-supporting organization. Finally, through utilization of available computing capacity in the Northeast and an existing communications network in the region, NASIC ultimately aims to become an efficient, self-supporting supplier of low-cost services particularly appropriate to

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the needs of the region's research community. These goals and the efficiencies and economies that they imply are the basis for the decision by the office of Science Information Service of the National Science Foundation to underwrite the development of NASIC, and for the support and enthusiasm for this cooperative effort by many of the principal universities of the Northeast.

The Functions of NASIC

In more specific terms, NASIC will direct its efforts toward the fulfillment of eight basic functions:

1. Market survey and analysis
2. Promotion and marketing of computer-based information services
3. Training of library personnel
4. Aggregation of demand from multiple users
5. Negotiation of contracts with suppliers at discount rates
6. Development of document delivery capability
7. Supplying information services directly
8. Development of an efficient delivery system based on existing resources within the region

Each of these functions is directly tied to the viability of NASIC as an organization and the brokerage concept as an effective means of providing information services.

The activity involving the determination and evaluation of the market for computer-based information services underscores the basic principle underlying the NASIC approach to the provision of information services. NASIC is devoting

a significant amount of its efforts and resources to an assessment of the specific information needs of the research community of the Northeast. To determine the nature and extent of the market, NASIC will utilize many of the techniques common to product introduction in the industrial and commercial environment -- but definitely not typical of the academic environment. This analysis will enable NASIC to ascertain demand for particular information services and will allow the setting of prices necessary to assure NASIC's self-support.

In addition to the determination of the existing and potential market for computer-based information services, NASIC will attempt to create new users through an active campaign of advertising and promotion. Various methods and media -- campus newspapers, bulletin boards and department meetings, to name just a few -- will be utilized and evaluated for broadcast effectiveness and cost effectiveness. Recognizing that word-of-mouth is probably the least expensive and most effective means of publicizing the utility of information services, NASIC will concentrate on developing a cadre of satisfied users on every campus.

An important aspect of the NASIC concept is that computer-based information services constitute a logical extension of the information services and products traditionally provided by the college and university library. Within the library of each major research institution in the region, one or more staff members will be trained to function as Information Service Librarians (ISL's). With the understanding of the principles underlying the search techniques for data bases,

with awareness of the content of the broad range of available data bases, and with the skills to develop and code effective search profiles, the ISL's will function as the interface between the supplier and users of information services so that the user can obtain fullest utility from existing information resources.

It will be the function of the ISL first to assist the researcher in the definition of his specific information requirement. Second, the ISL will have the responsibility to select the most appropriate source for the information required by the user. This decision involves not only the determination of appropriate data bases, but also an awareness of the search algorithms employed at the various information centers processing that data base to guarantee the most effective fulfillment of the particular requirements of the individual researcher. Third, the ISL will undertake the development of a search profile that will yield the greatest recall of citations and abstracts needed by the user while minimizing irrelevant and unnecessary references. Fourth, the ISL will be involved in the review of search output for relevance and completeness judgements. This review will also serve as the basis for determination of the desirability for the modification of the search profile in the case of continuing current awareness services. Finally, the ISL or a colleague in the library staff will assist in arrangements for document delivery related to the search output.

While the traditional role of the library is thus not modified by the introduction of computer-based information

services -- a computer printed list of bibliographic citations and abstracts is not significantly different from a typed list -- the manner and means by which services are provided by the library to the user will be changed. For this reason, an important component of the NASIC program will be the orientation of the academic library community to the utility of computer-based information services and the training of library personnel to enable them to acquire the knowledge and skills necessary to function as effective Information Service Librarians.

Another important aspect of NASIC's brokerage role will be the aggregation of demand from a multiplicity of users dispersed over a large geographic region. The economies of scale in the provision of such services are substantial, and only through aggregation of demand can the real costs of these services be kept at reasonable -- and marketable -- rates. The true costs of providing these services on a single campus, particularly in small or medium-sized universities, are very high, in most cases prohibitive. Through regional aggregation of demand, the cost components -- including hardware, data bases, technical staff input, and administrative and management resources -- can be prorated over a large number of searchers, with the add on to any individual search kept relatively low.

Further economies of scale and competition can be generated through the negotiation of contracts with a range of suppliers at discount rates. Because of the existence of competitive suppliers for many of the relevant services

and because most of these suppliers have capacity to provide significantly greater quantities of services at only marginal increases in real costs, the discounts resulting from aggregation of demand should in many cases be sufficient to cover the entirety of the NASIC overhead costs. Finally, NASIC's activities as a broker and aggregator of demand will enable NASIC to provide the research community of the Northeast with a much greater variety of services than would otherwise be available.

The basic assumption underlying this brokerage experiment is that it is inconceivable that a large number of universities in the Northeast would be willing to underwrite on their own the provision of a broad range of computer-based information services. It is even less likely that any of the small or medium-sized institutions would be able to offer even minimal services. And if one or more institutions did make such marginal services available, it would be impossible for them to provide the great variety that NASIC as a broker and aggregator of demand could offer to all of the researchers throughout the entire region.

The provision of bibliographic and abstract services at a reasonable cost, while in itself a worthy goal, does not constitute the sole objective of NASIC. The user often requires services beyond a listing of citations and a collection of abstracts; in many cases, document delivery is an essential component of total service to the user. Through its close ties to the academic libraries of the region, NASIC will work toward the development of systems for

delivery of the necessary hard copy to the user, whether it take the form of reprints, photocopies, microfiche or monographs. NASIC's link to the computer-based library support system of the New England Library Information Network (NELINET) and the ultimate utilization of that system for serials control, interlibrary loan and even perhaps circulation control, will play a significant role in the development of a viable hard copy delivery capability.

NASIC also recognizes that there is a broad range of potential information services that are not now available anywhere, and it is likely that NASIC will become a direct supplier of such services should a market for them exist. Activities in this area would include the development by the New England Board of Higher Education of data bases that would have national or particular regional utility. Such efforts might also include the initiation of a newsletter or adoption of other means of communication to keep the research community of the Northeast current on new developments related to information in their fields of interest.

Finally, NASIC sees as one of its primary functions the utilization of existing resources within the region as a basis for efficient delivery of information services. Reference has already been made to potential use of the NELINET system to assist in an economical document delivery capability. It is also planned that use will be made of the existing general computation computer network of the New England Regional Computing Program (NERComP) as a communications network for at least part of the delivery

process for computer-based information services. Should the utilization of the NERComP network prove effective, it is possible that the network might efficiently expand to include the entire Northeast region.. Furthermore, if demand for information from one or more data bases warrants it, NASIC could begin to "spin tapes" on its own, utilizing existing hardware and technical resources within the region to do the processing and the NERComP network as a delivery system. Finally, as NASIC moves into an operational mode, it is likely that we will discover or modify other existing resources to add to the efficiency of the delivery system for computer-based information services.

NASIC: The User's Perspective

The primary goal of NASIC is to provide valuable information services to the bench level researcher in the Northeast. From the point of view of this user, NASIC must provide fast and economical access to a body of information that is of use to him. Thus, to meet its objectives NASIC must be able to provide information from a broad range of data bases, must be able to deliver information products that are timely, complete and relevant, and must be able to do this at a price that will make the purchase of this service desirable.

It is the operating plan of NASIC that the user perceive these computer-based information services as the logical extension of the information services presently provided by the university library. When he is in need of information,

the user will arrange to discuss his particular requirements with the Information Services Librarian (ISL) resident at his own institution. Should the specific subject area be outside the range of competence of the local ISL(s) or should the user be located at an institution too small to employ a trained ISL, the user can be directed to an information specialist at the NASIC offices or to an ISL at another university in the region who happens to have special competence and knowledge in the specific discipline in question.

The ISL, after discussing the research problem with the user, will utilize the knowledge he has acquired about the various data bases and search techniques available to determine the most appropriate means of providing the necessary services. A search profile will be developed and coded by the ISL and the search ordered under the auspices of NASIC. The mode (on line or off line) to be used in developing the profile and ordering the search will depend on a number of factors including the availability of processing alternatives, the time requirements of the user, and the price the user is willing to pay. Within a period of time ranging from a few minutes to a week or more, the output will arrive at the desk of the ISL, who will review it with the user for relevance and completeness. At the same time, the user will be informed as to the options for obtaining hard copy of those articles that are of particular value.

In most cases the user will pay for these services by charging them to his personal or grant account at the university. In some instances, departments might allocate

funds for acquiring these services in their budgets, as support to the research of department members. In other situations, the college or university might choose to make these services available to all faculty members and students either free or on a token charge basis, with the service subsidy coming out of general library or academic budgets. But in all cases the user will appreciate that he is receiving a valuable service which has a real cost attached to it. And, the user will also be aware of the fact that the availability of this kind of information service was the result of a cooperative effort of his own institution and similar institutions operating under the auspices and guidance of NASIC.

Conclusion

NASIC reflects the intent of the New England Board of Higher Education, with the encouragement and financial assistance of the National Science Foundation, to provide a large research community with economical and effective access to a broad range of information services. By utilizing existing human and machine resources, both within and outside the Northeast region, NASIC hopes to demonstrate that these services can be made available without paying for the redundance of reinvention. While implementation of an effective brokerage operation is essential to the long range success of this experiment, of far greater importance is the demonstrated willingness of the region's institutions of higher education to recognize the need for cooperation for

mutual benefit and to work diligently to achieve that cooperation.

With a valuable product, effective management and continuing interinstitutional cooperation, NASIC will be able to demonstrate that the brokerage concept can be applied to the provision of information services.